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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,255	04/26/2001	Yoshihiro Kayano	2001_0474A	7526

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EXAMINER	
FONTAINE, MONICA A	

ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 06/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/842,255	KAYANO ET AL.	
	Examiner	Art Unit	
	Monica A Fontaine	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *8-18* is/are allowed.

6)☒ Claim(s) *5-7 and 19-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *Examiner's Amendment*.

DETAILED ACTION

This office action is in response to the paper filed 15 April 2004.

The rejections of claims 5-7 and 19-21 are maintained as stated in the paper mailed 16 December 2003 and are repeated here for applicant's convenience.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 5-7, 19-23, 25, and 26 are rejected under 35 U.S.C. 102(a) as being anticipated by Keller et al. (U.S. Patent 6,063,315). Regarding Claim 5, Keller et al., hereafter "Keller," show that it is known to carry out a method for injection-molding a molded article having a hollow portion by means of an injection-molding apparatus (Abstract), said apparatus comprising a mold assembly having a first molten resin injection portion for injecting a first molten thermoplastic resin into a cavity of the mold assembly (Figure 4, element 32), a second molten resin injection portion for injecting a second molten thermoplastic resin into the cavity of the mold assembly (Figure 4, element 34), and a pressurized fluid introducing portion for introducing a pressurized fluid into the second molten thermoplastic resin injected into the cavity (Figure 4, element 40), and a first injection cylinder communicating with the first molten resin injection portion and a second injection cylinder communicating with the second molten resin injection portion (Figure

4, elements 76, 32), said method comprising the steps of injecting the first molten thermoplastic resin from the first injection cylinder into the cavity through the first molten resin injection portion (Column 3, lines 1-4), initiating injection of the second molten thermoplastic resin from the second cylinder into the cavity through the second injection portion, without bringing the second molten thermoplastic resin into contact with the first molten thermoplastic resin injected into the cavity during said injecting the first molten thermoplastic resin into the cavity or after the completion of said injecting the first molten thermoplastic resin into the cavity (Column 3, lines 5-10; Column 8, lines 24-35; Column 14, lines 49-60), and introducing the pressurized fluid into the second molten thermoplastic resin in the cavity from the pressurized fluid introducing portion during said injecting the second molten thermoplastic resin into the cavity or after completion of injection thereof to, to thereby form the hollow portion inside the second thermoplastic resin (Column 4, lines 9-17, 46-52).

Regarding Claim 6, Keller shows the process as claimed as discussed in the rejection of Claim 5 above, including a method wherein the first molten thermoplastic resin comes into contact with the second molten thermoplastic resin in said introducing the pressurized fluid into the second molten thermoplastic resin in the cavity, the first molten thermoplastic resin being in a molten state when the first molten thermoplastic resin comes into contact with the second thermoplastic resin (Column 3, lines 60-67; Column 4, lines 1-2, 11-17, 33-52).

Regarding Claim 7, Keller shows the process as claimed as discussed in the rejection of Claim 5 above, including a method wherein a portion of the first molten thermoplastic resin comes in contact with the second molten thermoplastic resin in said introducing the pressurized fluid into the second molten thermoplastic resin in the cavity, the portion of the first molten

thermoplastic resin coming into a re-melted state due to the contact thereof with the second molten thermoplastic resin (Column 3, lines 60-67; Column 4, lines 1-2, 11-17, 33-52).

Regarding Claim 22, Keller shows the process as claimed as discussed in the rejection of Claim 5 above, including a method wherein the first molten thermoplastic resin comes in contact with the second molten thermoplastic resin after the start of said introducing the pressurized fluid into the second molten thermoplastic resin in the cavity (Column 3, lines 60-67; Column 4, lines 1-2, 11-17, 33-52).

Regarding Claim 23, Keller shows the process as claimed as discussed in the rejection of Claim 5 above, including a method wherein the first molten thermoplastic resin comes in contact with the second molten thermoplastic resin on or around a time of completion of said injecting the second molten thermoplastic resin into the cavity (Column 3, lines 60-67; Column 4, lines 1-2, 11-17, 33-52).

Regarding Claim 19, Keller shows that it is known to carry out a method for injection-molding a molded article having a hollow portion by means of an injection-molding apparatus (Abstract), said method comprising providing a mold assembly having a cavity disposed between a first molten resin injection portion and a second molten resin injection portion, and a pressurized fluid introducing portion provided at an opening of the cavity (Figure 4, elements 32, 34, 40), injecting the first molten thermoplastic resin from a first injection cylinder into the cavity through the first molten resin injection portion (Column 3, lines 1-4), injecting a second molten thermoplastic resin from a second cylinder into the cavity through the second injection portion, without bringing the second molten thermoplastic resin into contact with the first molten

thermoplastic resin injected into the cavity during said injecting the first molten thermoplastic resin into the cavity or after the completion of said injecting the first molten thermoplastic resin into the cavity (Column 3, lines 5-10; Column 8, lines 24-35; Column 14, lines 49-60), and introducing the pressurized fluid into the second molten thermoplastic resin in the cavity from the pressurized fluid introducing portion during said injecting the second molten thermoplastic resin into the cavity or after completion of injection thereof to, to thereby form the hollow portion inside the second thermoplastic resin (Column 4, lines 9-17, 46-52).

Regarding Claim 20, Keller shows the process as claimed as discussed in the rejection of Claim 19 above, including a method wherein the first molten thermoplastic resin comes into contact with the second molten thermoplastic resin in said introducing the pressurized fluid into the second molten thermoplastic resin in the cavity, the first molten thermoplastic resin being in a molten state when the first molten thermoplastic resin comes into contact with the second thermoplastic resin (Column 3, lines 60-67; Column 4, lines 1-2, 11-17, 33-52).

Regarding Claim 21, Keller shows the process as claimed as discussed in the rejection of Claim 19 above, including a method wherein a portion of the first molten thermoplastic resin comes in contact with the second molten thermoplastic resin in said introducing the pressurized fluid into the second molten thermoplastic resin in the cavity, the portion of the first molten thermoplastic resin coming into a re-melted state due to the contact thereof with the second molten thermoplastic resin (Column 3, lines 60-67; Column 4, lines 1-2, 11-17, 33-52).

Regarding Claim 25, Keller shows the process as claimed as discussed in the rejection of Claim 19 above, including a method wherein the first molten thermoplastic resin comes in contact with the second molten thermoplastic resin after the start of said introducing the

pressurized fluid into the second molten thermoplastic resin in the cavity (Column 3, lines 60-67; Column 4, lines 1-2, 11-17, 33-52).

Regarding Claim 26, Keller shows the process as claimed as discussed in the rejection of Claim 19 above, including a method wherein the first molten thermoplastic resin comes in contact with the second molten thermoplastic resin on or around a time of completion of said injecting the second molten thermoplastic resin into the cavity (Column 3, lines 60-67; Column 4, lines 1-2, 11-17, 33-52).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keller, in view of Siano (U.S. Patent 6,475,413).

Regarding Claim 24, Keller shows the process as claimed as discussed in the rejection of Claim 5 above, but he does not show using first and second resins which have different properties from each other. Siano shows that it is known to carry out a gas-assist molding operation wherein a first thermoplastic resin and a second thermoplastic resin have different properties from one another (Column 2, lines 50-59). Siano and Keller are combinable because they are concerned with a similar technical field, namely, that of gas-assist injection molding operations. It would have been prima facie obvious to one of ordinary skill in the art at the time

the invention was made to use Siano's materials in Keller's molding process in order to form a composite article useful in varied environments.

Regarding Claim 27, Keller shows the process as claimed as discussed in the rejection of Claim 19 above, but he does not show using first and second resins which have different properties from each other. Siano shows that it is known to carry out a gas-assist molding operation wherein a first thermoplastic resin and a second thermoplastic resin have different properties from one another (Column 2, lines 50-59). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Siano's materials in Keller's molding process in order to form a composite article useful in varied environments.

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jonathan Bowser on 14 June 2004.

The application has been amended as follows:

Claim 8, line 12, the following phrase has been added after "cavity, ":

--the first-molten-resin injection portion and the second-molten-resin injection portion being disposed on opposite sides of the movable partition member, respectively;--

Claim 13, line 13, the ";" at the end of the line has been replaced with a --,--

Claim 13, line 13, the following phrase has been added after "cavity, ":

--the first-molten-resin injection portion and the second-molten-resin injection portion being disposed on opposite sides of the movable partition member, respectively;--

Allowable Subject Matter

Claims 8-18 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art of record neither teaches nor suggests the claimed method for injection molding an article having a hollow portion wherein the first-molten-resin injection portion and the second-molten-resin injection portion is disposed on opposite sides of a movable partition member, respectively, in combination with the other specifically-claimed method steps.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments filed 15 April 2004 have been fully considered but they are not persuasive.

Applicant contends that Keller does not show injecting the second molten thermoplastic resin from the second injection cylinder into the cavity without bringing the second molten thermoplastic resin into contact with the first molten thermoplastic resin. This is not persuasive

because Keller explicitly states in his disclosure that the "gating sequence is determined to control the flow of the thermoplastic material away from a first injection portion sequentially to the ends of the mold cavity **without interfacing of flow of thermoplastic resin from multiple drops**" (emphasis added) (Column 14, lines 54-58). It is noted that although sensor 46 is relatively close to the second drop conduit 34, Keller's disclosure is clear that the two flows do not interface during injection.

Applicant contends that Keller does not disclose introducing pressurized fluid into the second molten thermoplastic resin during the injection of the second molten thermoplastic resin or after completion of the injecting the second molten thermoplastic resin into the cavity. This is not persuasive because Keller clearly teaches injecting pressurized fluid into the second molten thermoplastic resin (Column 4, lines 12-13; Column 6, lines 16-19).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patent application publication is cited to further show the state of the art with regard to gas-assist injection molding operations in general:

U.S. Patent Application Publication No. 2003/0209841 (Porter)

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A Fontaine whose telephone number is 571-272-1198. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maf
June 15, 2004

MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER